ABSTRACT OF THE DISCLOSURE

Filtration cells capable of direct sampling of a fluid from a container and which may be used for microfiltration of both small and large microvolumes of a fluid to be filtered are provided. Also a process for directly transferring a fluid to be filtered from a container to a filtration cell is described. The filtration cells have one or more reservoirs and are in communication with fluid in a container to be filtered through a piercing instrument connected to a base and support for a reservoir that receives the fluid to be filtered after it passed across a filter membrane. The filtration cell may then be pressurized and vented to allow fluid to be filtered to reciprocally and tangentially pass across a filter membrane between either a container having a fluid to be filtered and a single reservoir for small volume filtrations or between two reservoirs after pressurizing a fluid to be filtered into the reservoirs from a container using a piercing instrument. Side wells for collecting samples from the bottom up from the filtration cell outlet are also provided as are a process incorporating automated equipment for transferring the container having fluid to be filtered to the piercing point for entry into the filtration cell.